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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/487,287	01/19/2000	Andrea De Toffol	8907-9021	2986

7590                    05/16/2002

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[REDACTED] EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
1774	//

DATE MAILED: 05/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/487,287	DE TOFFOL ET AL.
	Examiner	Art Unit
	Lawrence D Ferguson	1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 05 March 2002.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the amendment mailed March 5, 2002.

Claims 1, 3, 4, 6, 8, 9, 14 and 15 were amended and claims 1-16 are pending.

### ***Claim Rejections – 35 USC 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claim 1, the term “generally” is a relative term, which renders the claim indefinite, as indicated in the previous office action.

### ***Claim Rejections – 35 USC § 103(a)***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima et al. (U.S. 5,442,523) in view of EP 0724181.

6. Kashima discloses a backlighting device for use with display panels that has a light conducting plate and a light source provided in proximity to the end portion of one or both sides of the light conducting plate (column 2, lines 16-20) where backlight devices of displays are analogous to luminous signs. The panel of Kashima can be made by molding or casting (column 6, lines 48-49) having light diffusing capability and all surfaces of the light conducting plate being covered with a light reflecting plate or film except at least the end portion of the side and on the exit face (column 2, lines 20-26). The reference discloses single lamp edge lighting, dual lamp edge lighting and edge lighting (column 2, lines 30-48) comprising barium sulfate (column 3, lines 9-10) which can be added to the conducting layer with light diffusing areas (column 3, line 32). Kashima discloses the light conducting plate made of polymethyl methacrylate PMMA having a thickness of 2mm (column 7, lines 64-66) and which are used as the thermoplastic layer with a commercial polycarbonate sheet 360 $\mu$ m thick (column 10, line 33) where polycarbonate is known to be a thermoplastic material. The reference discloses enhancing means being entirely transparent and comprising at least one sheet (column 14, lines 8-9 and lines 34-44) with an area greater than 600 cm<sup>2</sup>. Figure 1(a) shows a composite panel having more than one edge that is used to light the referenced invention. Kashima does not disclose the diffusing light layer thickness, or amount by weight or particle size of barium sulfate.

EP '181 teaches a composite panel with a light reflective sheet in a back light unit under a transparent light guide plate with improved luminance (abstract) with a light diffusing sheet (page 4, line 17) having an average particle size of the inorganic filler of 0.1 to 7  $\mu$ m and is in the range of 100 to 300 parts by weight, where the inorganic filler is barium sulfate (page 6, lines 20-

31) and the amount of additive is 0.01 to 5 parts by weight (page 6, lines 50-51). EP '181 teaches the light diffusion sheet having a thickness of 113 um (page 11, lines 14 and 54-55). Kashima and EP '181 are analogous art because they are from the same field of backlighting devices. It would have been obvious to one of ordinary skill in the art to include the thickness of the light diffusing layer, the amount by weight and average particle size of barium sulfate in the composite panel of Kashima because EP '181 teaches features are known within the art and one of ordinary skill would understand how to adjust the amounts and particle size of barium sulfate based on the amount of light desired to be diffused.

***Claim Rejections – 35 USC § 103(a)***

7. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. (U.S. 5,710,856) in view of EP 0724181.

8. Ishii discloses a thermoplastic resin film (column 11, line58) and a film having excellent transparency (column 12, lines 30-31) with a light diffusion sheet mounted on a surface (column 6, lines 31-32) and molding the sheet by extrusion (column 7, lines 26-28) with a panel analogous to a sheet (page 3, line 1). The reference discloses finely powdery inorganic filler such as barium sulfate (column 7, lines 60-63) having the particle size of the finely powdery inorganic filler is in the range of from about 0.1 to 7 $\mu$ m (column 8, lines 16-21) with the area of the composite is more than 600cm<sup>2</sup>. Ishii discloses finely powdery inorganic filler to be added in the range of 100 to 300 parts by weight (column 8, lines 36-48) and adding 5 to 70% by weight of

inorganic filler (column 13, lines 58-62) and a light reflective sheet (column 8, line 50). Ishii discloses a single-screw extruder or a twin-screw extruder (column 9, line 32) along with sheet molding (column 9, line 46) and a heat fixing treatment (column 9, line 58). The thickness of the sheet is in the range of from 50 to 500 $\mu\text{m}$  (column 10, lines 27-31) with polymethacrylate resins such as polymethyl methacrylate, polyester resins and polyethyl acrylate (column 11, lines 1-11) with an adhesive method and a UV light protective layer having a thickness in the range 20 $\mu\text{m}$  to 40 $\mu\text{m}$  (column 19, lines 43-66). Ishii discloses PMMA film (column 20, line 38) and PET film containing an inorganic filler with a thickness range from 12um to 125um (column 21, lines 1-67 and column 22, lines 1-63) and a device selected from a group consisting of back light units of displays, projector system displays and electronic blackboards (column 29, lines 20-24). Back light units of displays are analogous to luminous signs. Figure 2 shows a composite panel having more than one edge that is used to light the referenced invention. Ishii does not disclose the diffusing light layer thickness.

EP '181 teaches a composite panel with a light reflective sheet in a back light unit under a transparent light guide plate with improved luminance (abstract) with a light diffusing sheet (page 4, line 17). EP '181 teaches the light diffusion sheet having a thickness of 113 um (page 11, lines 14 and 54-55). Ishii and EP '181 are analogous art because they are from the same field of backlighting devices. It would have been obvious to one of ordinary skill in the art to include the thickness of the light diffusing layer of Ishii because EP '181 this property is known within the art. The thickness of the light diffusing layer has a direct effect on the luminance. Therefore it would be obvious to optimize the thickness to gain improved luminance as taught by EP '181.

***Response to Arguments***

9. Applicant's remarks to 35 USC 112, second paragraph have overcome rejections a-h due to amendment of claims 1, 4, 6, 8-9 and 14-15 by amending the indefinite claim language. 35 USC 112, second paragraph rejection of i is upheld for claim 1 because Applicant failed to adhere to the rejection. Applicant's arguments of rejection under 35 USC 103(a) as unpatentable over Kashima et al. (U.S. 5,442,523) have been considered but are unpersuasive. Applicant argues Kashima produces an uneven luminance distribution on the plate; however, Applicant does not disclose an even luminance distribution on the plate. Applicant argues Kashima simply contains no teaching or suggestion with respect to the use of barium sulphate rather than titanium dioxide in a light diffusing sheet of thermoplastic material. Examiner disagrees because as Applicant claims barium sulphate in a light diffusing sheet of thermoplastic material, Kashima discloses the same. Applicant does not claims the use of barium sulphate rather than titanium dioxide, Applicant simply claims thermoplastic material containing barium sulphate. Applicant further argues there is no indication of the quantities of the inorganic powders or pigments to be used. This argument is held moot due to grounds of new rejection.

Applicant's arguments of rejection under 35 USC 103(a) as unpatentable over Ishii et al. (U.S. 5,710,856) have been considered but are unpersuasive. Applicant argues Ishii does not teach a layer applied on a surface of the transparent thermoplastic base plate improving light diffusion. This is not true because Ishii discloses a thermoplastic resin film (column 11, line58) and a film having excellent transparency (column 12, lines 30-31) with a light diffusion sheet mounted on a surface (column 6, lines 31-32) and molding the sheet by extrusion (column 7,

lines 26-28) with a panel analogous to a sheet (page 3, line 1), where the light diffusion sheet mounted on the surface in fact improves light diffusion. Applicant argues that Ishii teaches a light reflecting layer, which is not claimed. Examiner disagrees because claim 12 discloses the use of a reflecting film. Applicant's objection to the thickness of the diffusing light layer is moot due to grounds of new rejection

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.



Lawrence D. Ferguson  
Examiner  
Art Unit 1774

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
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